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THE CONTROVERSY OF SCIENCES: HUMANITIES REVISITED

Sabbar S. Sultan

ABSTRACT

The present paper is an attempt to explore the various views of the problematic relation between sciences and humanities. It is a relation marked by a great extent of discontent and misconception. It has six sections. The first section is a theoretical background. The second deals with Wells's fiction. The third is devoted to Huxley's. The fourth is about Snow's writings in this field. The fifth section discusses Albee's Who's Afraid of Virginia Woolf. The last section deals with the contribution of the post-modernistic writers to this controversy.

> *It is not a question of annihilating science but of controlling it. Science is totally dependent on philosophical opinions for all its goals and methods, then it easily forgets.*
>
> *(Nietzsche)*

PRELIMINARY REMARKS

Modern literary theory draws upon the binary oppositions in literature such as man-woman, oppressor-opressed, author-reader, producer-consumer, indigenous-native ... etc. Yet, the duality of sciences and humanities has not received its due emphasis in cultural studies, and only casual and passing references are given. There are of course serious attempts exerted in this, particularly the famous debate between the British C. P. Snow and F. R. Leavis about the literary and scientific cultures and the priority of one or the other. The Victorian critic Matthew Arnold (1822–1888) has preoccupied himself in the cultural implications of science and its applications as felt in his *Culture and Anarchy* (1882). Indeed, he used to consider himself as 'the liberal of the future—a future which has not yet arrived' (Bush 1971: xiii). Even so, humanities are not short of competent and adamant defenders of their cause, ready to respond to any challenge or threat posed by science and its practitioners. Although both fields aim at similar objectives, i.e., serving man's interests, welfare and better living conditions, their methods and procedures vary considerably. Sciences are basically concerned with the factual and empirical and leave no room for anything transcending their

working principle of cause and effect. In contrast, humanities have been concerned with faiths, metaphysics, intuitive thinking and feelings. Christopher Caudwell outlines the differences between the two disciplines in the *external* reality (science) and the *internal* one (humanities), "Science is the means by which man learns what he can do, and therefore it explores the necessity of outer reality. Art, in the arguments of the advocates of the humanities and its spiritual background, is the means by which man learns what he wants, and therefore it expresses the essence of the human heart" (Delany 1971: 288). Hence the fallacies and misconceptions enveloping these disciplines, although there have been attempts to find a kind of rapprochement or reconciliation between both disciplines.

One limitation facing any study of this topic is that it is unilateral in that we lack concrete evidence of scientists' taking the issue of humanities and giving it its due attention. No plausible reason has been presented but one can guess that their interest in the empirical and tangible does not provide an adequate impetus for dabbling in intuitive and speculative flights. Moreover, the final products of humanities, especially in art and literature do not stand up under rigorous analysis and are in no position to match the scientific ones.

The writers selected in the major part of this paper (H. G. Wells, Aldous Huxley and C. P. Snow) are all British who lived in the twentieth century and had a common scientific background. Moreover, all of them betray a variable extent of optimism or pessimism concerning the prospects and potentialities of science. The American contemporary dramatist, Edward Albee, shares these three figures an interest in the dispute between sciences and humanities and how each entrenches behind a set of disciplines and principles and is eventually dubious of the other's intentions and even feats. The last section of the paper is devoted to show the repercussions and drastic outcomes of the uses or misuses of the scientific and technological world as felt in the texts chosen from Samuel Beckett (1956, 1979), Thomas Pynchon (1965) and John Barth (1965).

A passing glance at the figures grouped together here may give the impression that twentieth century is the only age when this relation between sciences and humanities has reached this measure of polarization and opposition. To be more exact, the last two centuries or so have witnessed an increasing distance between the two fields. In the *Age of Reason*, science was celebrated as a liberating force and was a complimentary element in the literary and artistic writings of the age. An early example is John Donne's metaphysical poetry in the seventeenth century which sought to reconcile the literary material with the scientific data. Indeed Donne could only

express his heartfelt joy at Isaac Newton's birth which opens up new vistas for humankind:

> Nature and Nature's laws hid in night:
> God said Let Newton be, and all was light.
>
> (Koestler 1963: 224)

Much earlier than this, Christopher Marlowe (1564–1593) depicted the intellectual man's dilemma as he tries to answer the insoluble questions of existence by means of natural sciences and magic in his play, *The Tragical History of Dr. Faustus* (1604). Such is the glamour of this topic that it will kindle the imagination of the German writers like Johann Wolfgang Goethe (1749–1832) in *Faust* (1820) and Thomas Mann (1875–1955) in his novel *Doctor Faustus* (1947). Indeed, the hero of Goethe's *Faust* (1820) could only find a solution to his restless spirit through pursuing all types of knowledge. His aspirations and ambitions are infinite. His problem is the eternal question of the transience of the moment and he is at pain to stop this endless flux of time. He makes use of all means at his disposal, in theory and practice, the physical and metaphysical, the scientific and supernatural, but the targets are inaccessible, and the thirst for knowledge remains unquenchable. Having exhausted them all (the sciences and humanities), Faust keeps complaining, "What a sea of confusion and error we live in, finding no use for knowledge we have and lacking the very knowledge we need" (Goethe 1971: 775). Because of its comprehensive perspective of epistemology, both in the scientific and literary planes, the author rightly calls it "the main task" (Goethe 1971: xxix). In despair and total surrender, the tragic hero sells his soul to Mephistopheles in exchange of the fulfillment of these unattainable desires and whims. In this work, metaphysics is given priority compared with natural sciences.

Jonathan Swift's *Gulliver's Travels* (1726) talks about the biological and physiological changes in the beings the book describes, albeit from a highly sarcastic and malicious viewpoint. Paradoxically enough, Mary Wollstonecraft Shelley (1797–1851), and her romantic husband and poet, Percy Bysshe Shelley, had a great zest for natural sciences. Mary is the daughter of the great anarchist philosopher and atheist, William Godwin. She contributed to Lardner's scientific biographies and her novel, *The Last Man* (1833) had the image of a flying machine. However, her *Frankenstein* (1818) is an early novel about a demonic scientist who plans to 'create' other creatures by certain experiments, a point to be manipulated in Wells's fiction, as will be shown in due course. In the Renaissance Italy, Leonardo

da Vinci (1452–1519) exemplified the interrelation between the factual and aesthetic and artistic as seen through the scientific sketches which lie side by side with his great paintings. As the development of science got greater momentum in the last two centuries or so, the reactions of writers, philosophers, theologians grew louder and sharper. It is to William Blake in his highly romantic idea of this subject that science appears to be lagging behind the pioneering endeavors of art and humanities in general. As he puts it, "The foundation of the empire is art and science. Remove them or degrade them, and the empire is no more. Empire follows art and not vice versa as the Englishmen suppose" (Barsamian 1994: 65). Names like Tolstoy, Shaw, Conrad, Lawrence, Orwell, Wells and etc. have drawn our attention to the ambivalent use of science: It is indispensable and at the same time susceptible of bringing about catastrophic effects on ecology, morality and humanity. D. H. Lawrence's *The Rainbow* (1915) is relevant and memorable in bringing home the issue of industrialization and its concomitant problems of pollution and destruction of the British green scenery. Bertolt Brecht's *Galileo* (1947) is a further step in escalating the growing-chasm between the two realms. Here the scientist who has reached verifiable conclusions supported by his scientific observations and calculations has to give concessions to humanities and disclaim publicly the validity of his own discoveries because factual reality does not always go in line with the metaphysical one. Indeed, his situation embodies the conflict between sciences and humanities at its highest position.

The conflict between humanities and sciences reaches great extents in Wells's *Mind at the End of its Tether* (1945). Wells sees with bitterness and despair the tragic lot of mankind where nothing can save it, "In a sober and curiously modern *scientific* tone", as Patrick Parrinder describes it, "Wells now wrote that the whole human species, and not just the things he opposed, was an anachronism; it had failed to adapt to its environment and its extinction is at hand" (Parrinder 1970: 2).The contemporary British novelist, John Fowles (1926–2005) showed an interest in the dialogue or antagonism between humanities and sciences in his book, *The Collector* (1963). This book is about how a scientist kidnaps a girl and keeps her captive till she dies for unknown reasons; even sex does not play a part here. The girl is an artist, a painter and a poet (her name is Miranda with all its conspicuous Shakespearian echoes of his *The Tempest* (1610), while Clegg, the scientist, appears aloof and indifferent. Indeed he is called Caliban, the savage in Shakespeare's play that refuses to adapt himself to any cultural change and is enslaved by his bodily lusts:

> I'm an entomologist, who collects butterflies … Since Caliban wants to give, I don't care how much paper I waste … I was looking about one of the sketches (the one I liked best). He annoyed me, and it didn't mean anything to him. (Fowles 1963: 143).

Even when Miranda dies at the end of the book, this event does not leave much impact on his mind. Everything is objectified and made devoid of any human or religious sense, "I think we are just insects, we live a bit and then die and that's the lot" (Ibid: 284).

If the priority is given to humanities in Fowles's fiction and essays in his *The Aristos* (1964), Peter Shaffer's *Equus* (1973) contrasts the cool, calculating scientist, Dr. Martin Dysart, the child psychiatrist, with the passionate and instinctive life of his patient, the 17 year old Alan Strang. Instead of learning the reasons behind Alan's sadistic act of blinding the horses he has long adored, the psychiatrist (scientist) perceives dimly the futility of his own meaningless life with his Scottish wife and their "antiseptic proficiency" (Shaffer 1973: 61). His very name 'Dys-art' reveals, as the critic Walls rightly suggests "that the one quality needed to remedy his existential problem is in art" (Walls 1984: 320). Even among writers whose main concern is not the direct confrontation between sciences and humanities, when it comes to presenting technological and industrial innovations and machines, the narrative description acquires a horrid and chilling tone. In the third part of Mervyn Peake's trilogy, *Gormenghast*, entitled *Titus Alone* (1959), the writer presents a shocking picture of the technological world. The frequent authorial intrusions and interpolations all help in crystallizing a situation that runs counter to Titus's spontaneous and intuitive perceptions.

All these examples and many others the space is lacking to cover testify to the fact that sciences and humanities have different channels and understanding of man's position in this world. Despite these differences, the two fields have some common points. Scientists and artists have the same matrix, particularly in their responses to the outside phenomena or their innermost feelings. Here the contemporary critic and novelist, Arthur Koestler, points out the essential similarities and common points between the two fields:

> From Kepler and Decartes to Plank and de Broglie the working methods of the great pioneers seem to have been inspired by Einstein's jingle:
>
> A thought that sometimes makes me crazy:
> Am I, or are the others crazy?

> If one were shown an anthology of typical letters from scientists's letters and autobiographies with no names mentioned, and then asked about their profession the likeliest answer would be a bunch of poets or musicians (Koestler 1963: 146).

In both camps, the practitioners are great dreamers and visualizers who are not content with what is going on and hope to change the status quo. But the methods vary considerably. In humanities there is always a time-honored tradition of folklore, myths and findings whose soundness is taken for granted. In contrast, the validity of the scientific enterprise lies in showing its divergence from or even discontinuity with its predecessors. The new scientific experiment, although stemming from other accumulated ones, has its own fresh findings and conclusions which often lead to a new principle contradicting or even canceling the previous ones. Indeed, even the very idea of progression in sciences has been challenged since science seems to scholars like S. Kuhn and Paul Feyeraband to be progressing "in series of jumps in a 'discontinuous' movement from one discursive formation or 'paradigm' to another" (Selden et al. 1985: 145). The Polish-English novelist, Joseph Conrad (1857–1924) adds his own contribution to the issue by sorting out the subjective characteristics of humanities from the scientific impersonal ones:

> …whereas the scientist and thinker are concerned with the *external aspects of the world*, the artist *descends within himself* to win the truth from that lovely region of stress and strife (Conrad 1955: 21).

If the subjectivity of humanities is quite evident here and science is known for its excessive objectivity, it is natural that we come across such cases of misunderstanding and fallacies. The history of both fields shows that humanities always try to keep track of science, making use of its data and strategies and at the same time keep downgrading science's position. Nietzsche's epigraph in this paper is a good example of the condescending tone of humanities and how science appears to his mind as more than an offshoot of humanities's spacious field. The same holds true to D. H. Lawrence's claim in his often-quoted statement in the article *Why The Novel Matters* (1936) that he considers himself better than the 'scientist', because, in his view, the novelist's vision is comprehensive while the scientist's is narrow and fragmentary. But if we look carefully at the terms used in art and literature, we discern a continuous state of borrowing from science and its tools. Literary criticism is crammed with terms whose genesis is science such as **naturalism, structuralism, feminism, code, gestalt, addresser, addressee** etc. Such borrowings are merely single-dimensional in that it is

humanities that borrow while science always takes the initiative and seeks to initiate a line of its own. Moreover, there is an extent of freedom on the part of sciences that can not be matched in humanities as the beholder or the recipient of the work of humanities is a factor at work in determining the nature of the work written. Ezra Pound (1885–1972), the American poet and critic, tries to reduce the external influences on the writer and the practitioner of humanities in general, but the precarious situation of the writer and his delicate relation with the reader is a factor to be taken into consideration. In science, this limitation is not there:

> It is futile to expect a poet to get the right words, or any sort of artists to do real work, with one eye on the public, as it would be to expect the experimenter in a chemical laboratory to advance the borders of science, if he has constantly to consider whether his atomic combinations are going to flatter popular belief, or suit the holders of monopolies in some over expensive compound (Pound 1952: 230).

In other words, science is self-sufficient and self-generating. Science ignores and slights the humanities as merely imaginary constructs that can not hold before verification. Of course, this is not always true as humanities have their own *raison d' etre* and justifications. Because of these differences, it is logical to find that humanities have their own set of conceptions and priorities that have to be observed and taken into consideration. I. A. Richards (1893–1979) reminds us of the 'autonomous' aspect of science in that "the impulses developed in it are modified one by another, with a view to the greatest possible completeness and systemization" (Richards 1924: 210). Besides, the writers themselves often raise doubts about their own field, whether it is worth the effort spent or not. John Fowles, if we refer to him once more, is the most outspoken in this regard when he asserts the invalidity of the enterprise of art and literature as a whole:

> We also know that a genuinely ordered world must be independent of its creature; a planned world…is a dead world. It is only when our characters and events begin to disobey us that they begin to live. When Charles left Sarah at the cliff-edge, I ordered him to walk straight back to Lyme Regis. But he did not (Fowles 1969: 98).

Arguments of this sort, though artistically justified and acceptable, do seem illogical and meaningless from a scientific perspective. How dare a fictional character defy the orders of its creator? Such self-indulgent games and fantasies make humanities a totally self-enclosed activity where science

fears to tread. Also science may view the products of humanities with a pinch of salt.

Even writers themselves often betray a sense of dissatisfaction and disillusionment with respect to their own writing. Not all writers consider writing as "a duty, rather than a distraction" as Herbert Spencer used to do (Helgerson 1978: 893). The American novelist, Herman Melville (1819–1891), for instance, used to underrate his own field and "thought of himself as a journalist without a prejudice" (Bayan 1974: 909). The same defense will be used by H. G. Wells in his debate with Henry James. In 1911, Wells declared his position in a lecture on 'The Contemporary Novel' where he attacked the cult of 'artistic perfection', separated himself from the self-conscious artists and classified himself a 'journalist'. The task of his fiction was simply to deal with "political questions, religious questions, and social questions" (Ford 1988: 114). Indeed the very existence of literature and humanities in general becomes questionable in the philosophical discourse common nowadays. In his *Of an Apocalyptic Tone in Recent Philosophy*, the French philosopher and critic, Jacques Derrida (1930–2004) sees "not only the end of this here but also and first of that there, the end of history, the end of class struggle… the end of man, the end of literature, the end of the past" (quoted in Waugh 1992: 12). Many Western thinkers and scholars share Derrida's bleak and nihilistic view about the future of humanities. Maurice Blancheot (1907–2003), for instance, prophesizes the disappearance of literature altogether "a disgust against books will seize us…the dictator will take the place of the writer, the artist" (Wellek 1982: 7). The figurative demise of the writer in humanities suggested by Roland Barthes's *Death of the Author* (1977) and Michel Foucault's *What is an Author* (1970) run in the same vein of displacing and debilitating the role of humanities as the main argument in these is the predominant role of the sign and the decreasing role of the writing subject. Even a creative writer like John Barth (b. 1930) can only perceive a 'Literature of Exhaustion' where "the novel, if not narrative literature generally, if not the printed word altogether, has by this hour just about shot its bolt" (Barth 1989: 267). For all this controversy about their presence or absence and precarious future, humanities have one invariable attitude towards science and its achievements: Reservation, fear, and warning against the unpredictable practices of science and its detrimental effects on them. The twenty-first century has shown clearly that such fears are justified.

Conversely, these manifestations of exhaustion, the realization of the state of decay and futility besetting human beings, are interpreted by the advocates of science as symptomatic of the pathetic failure of literature and art in general to maintain its pioneering role it used to entertain. The modern

critic Max Eastman (1883–1969) quotes T. S. Eliot's *Ash Wednesday* as exemplary of the lack of communication with others and its egotistic interests:

> If the lost word is lost, if the spent word is spent
> If the unheard, unspoken
> Word is unspoken, unheard;
> Still is the unspoken word, the Word unheard,
> The Word without a word, the Word within
> The World and for the World;
> And the light shone in darkness and
> Against the Word, the unstilled world still whirled
> About the centre of the silent Word.

After reading this poem many times, he comes to the firm conclusion that this type of poetry is far-fetched and self-referential and it is no more than an inflated reaction to the accelerating march of science. The ambiguity is a sort of "willfulness on the part of the creative writer about his shaky place in modern life" (Eastman 1931: 101). I think Eastman's critique is justified and sound if we notice the deliberate ambiguity of the stanza which does not lead to a clear-cut recognition of the poet's message, if any.

The works chosen here (written by H. G. Wells, Aldous Huxley, C. P. Snow, and Edward Albee) have aroused much controversy in humanities on more than a level: Their types, i.e., utopias or dystopias, optimism or pessimism, a progressive spirit or regressive one. Also the problems raised in these works are basically cultural in that they tackle the feats and problems that ensue in society, any society, when natural sciences are fully applied. Albee's *Who's Afraid of Virginia Woolf* has its own set of controversies concerning the situations in the play, the names of the characters (Martha and George), and attitudes regarding the duality emphasized in this paper: Sciences vs. humanities. The justification for grouping a contemporary American play among Edwardian fictions is clear enough: The main arguments of the play and attitudes revolve around the subject of humanities and sciences and show its bias to humanities. Snow's case is striking because it has become axiomatic by now that no sooner is the name of Snow mentioned than his detractor, F. R. Leavis, comes to the fore, as the two have been involved in a heated and relentless controversy regarding the central issue in this paper.

Finally, a word ought to be said about the approach used throughout. It is thematic in that the artistic and formalistic questions of the writers are nearly ruled out. What is central here is the contribution of the writer to the

argument when the work is seen from the hindsight of controversy between humanities and sciences.

H. G. WELL'S MODERN UTOPIAS

The first name that needs to be mentioned is H. G. Wells (1866–1946) for his great contribution to the duality discussed. He got his technocratic education at the Royal College of Science and came under the influence of T. H. Huxley, the famous biologist (1825–1895). The latter helped him in the study of "Darwinian biology, which is considered the foundation of his world view" (Hughes 1977: 48). This important privilege of a scientific background has enabled Wells to have a fresh and even iconoclastic view at times of literature, society and the world at large. He elaborates the relation between sciences and humanities through the various persona and masks he has proliferated throughout his career as a writer. By the aid of science, Wells feels equipped with "a wide base of operation in the fight against the established order" (Raknem 1962: 209). He annunciated and hailed the emergence of a new era with a new mind which he identified as 'legislative' rather than 'submissive', the mind that "thinks constantly, and by preference, of things to come and of present things, mainly in relation to the results that must arise from them" (Wells 1902: 8). In other words, his type of thinking is empirical and experimental and even pragmatic: Judging the thing by the value or benefit it can offer. His book, *A Modern Utopia* (1905) typifies Wells's dream of a better life and its vast and limitless potentialities:

> The almost cataclysmic development of new machinery, the discovery of new materials, and the appearance of new social possibility through the pursuit of material science, have given enormous and unprecedented facilities to the spirit of innovation (Wells 1905: 62).

Such a celebration and hearty welcome of life and its potentialities meticulously controlled by science represents the backbone of Wells's global image of man and society. In his 'autobiography', he reiterates this optimistic spirit and faith in life:

> It is only through a conscious, frank and worldwide operation of the man of science, the scientific writer, the man who is accustomed to the direction of productive industry, the man able to control the arterial supply of credit, the man who can control the newspapers and politicians, that the great system of change they have almost inadvertently got going can be brought to any hopeful order of development (Wells 1934: 743).

In general, there is a consent among critics and historians that Wells's work is classified in three stages according to the visions and views present in them. The first stage will be emphasized here as in this stage Wells's work stirs much controversy regarding the relation between sciences and humanities. At this time, Wells was quite convinced about the power of science in solving man's urgent problems, and eventually he marginalized any system beyond this basic postulate in his thinking. Having said this, one has to add that there is also a streak of doubt and growing sense of pessimism regarding the application of science and achieving this utopia, because man's nature is a counterforce that is prone to impede implementing such far-reaching expectations. This sense of unease is prevalent in most novels and essays of this stage.

His arguments with Henry James about the validity and use of literature go in line with his swaying between faith in science and rational spirit and a sense of misgiving about its final output. At this stage, Wells was convinced that literature and humanities in general can not match the vital role played by science. Hence his labeling himself as a 'journalist' whose main task is not to entertain, but to enlighten people, inseminating ideas about what is awaiting them.

As already indicated, Wells in his early stage showed a more or less measure of admiration of the vast horizons opened by science. Nevertheless, this has not prevented him from seeing the other negative side-effects of its applications. A good example here is *The Island of Dr. Moreau* (1896). The demonic scientist on the Pacific island (Dr. Moreau) and his assistant, Montegamry, are driven to a terrible experiment: That of transforming animals by means of conditioning and plastic surgery into human beings. The book devotes much space to describing the actions of the operators and the reactions of the animals in question (dogs, gorillas, bears) so that this dream of having the human-beast can become true. The doctor keeps ordering the animals to abandon their former habits of walking on "all fours" and eating and drinking. The experiment succeeds and we have a hybrid race (human-beasts). But poetic justice demands the annihilation of this devilish project of the scientist who has put himself in the position of a "creator". His situation brings to mind Fausts's diabolic ambition and its catastrophic results. His end comes when one of these giant beasts revolts against the terrible master and kills him. His assistants are stricken by panic and the animals at last are released from their "human" imprisonment and return to their wild and irrational but natural mode of life. J. R. Hammond interprets this tale as belonging to Wells's view of Darwinian theory that "Man was superficially a rational being but he possessed immense potential for evil if the animal within him was allowed to conquer the rational"

(Hammond 1979: 87). The action of the book shows that the 'rational' has its own disadvantages as seen in Dr. Moreau's evil practices. Creating a monstrous creature by a terrible act of hybridization is not new in English literature as it is already in existence through the pioneering experiment of Mary Shelley and her *Frankenstein.* The difference, however, lies in capitalizing exclusively on science and rational thinking rather than depending on the magical and gothic elements in Mary's book.

The Time Machine (1895) which has been an endless area of controversy among critical and historical circles reveals Wells's sense of bitterness and despair of his former plans and ambitions. This is an imaginary journey undertaken by the Time Traveller to transcend the limits of time. The fourth dimension (duration) is pivotal here. If Dedalus has cudgeled his brain and succeeded in overcoming the law of gravity by an ingenious device, the present thinker, Wells's alter ego, has a no less ambitious dream: It is to move both to the future and to the remote past the way he likes. At the beginning he prefers the future. He leaps to the year 802,701 AF (F here could refer to Ford or Freud, the pillars of his Western consumer society).What he discovers in this futuristic world is not basically different from the one he has left. The inhabitants of this imaginary world, the Eloi and Morlocks, are in fact a copy of his own world that is founded on strict and insurmountable hierarchy. Even after the elapse of this terribly long time, man's lot will remain the same, the novel suggests.

He will remain smarting under all types of pressures and torments. The images of darkness and terror permeate the scenery:

> The darkness grew apace; a cold wind began to blow in refreshing gusts from the east, and shearing white flakes in the air increased its number. From the edge of the sea came a ripple and a whisper. Beyond these lifeless sounds the world was silent. Silent? It would be hard to convey the stillness of it … As the darkness thickened, the eddying flakes grew more abundant … the cold of the air more intense. At last, one by one, swiftly, one after the other, the white peaks of the distant hills vanished in darkness. The breeze rose to a moaning wind. I saw the black central shadow of the eclipse sweeping towards me. In another moment the pale stars above were visible. All else was rayless obscurity. The sky was absolutely black (Wells 1895: 14).

Wells foreshadows the end of the world as a physical object but man's ordeal and suffering will continue. As such a terrible sense of revulsion and nausea possesses the Time Traveller, the implied author in the novel, as he sees the terrible destiny of man even in this furthermost point of his imagination. It is this bitter realization that impels the Time Traveller to

speed up his steps and resort to a pre-industrial and prelapsical world: The remote past where civilization hardly exists:

> A horror of this great darkness came over me. The cold that smote to my marrow, and the pain I felt in breathing overcame me. I shivered, a deadly nausea seized me. Then like a red-hot blow in the sky appeared the edge of the sun. I got off the machine to recover myself. I felt giddy and incapable of facing the returning journey. As I stood sick and confused I saw again the morning thus upon the shoal—there was no mistake now that it has a moving thing—against the red water of the sea. It was a round thing, the size of football, perhaps, or, it may be bigger, and tentacles trailed down from it; it seemed black against the weltering blood-red water, and it was hopping fitfully about. Then I felt I was fainting. But a terrible dread of being helpless in that remote and aweful twilight sustained me while I clambered upon the saddle (Wells 1895: 141).

The sense of helplessness and bitter realization, which has become the cornerstone of Wells's vision, is shockingly present here. Hence the Time Traveller's return to a remote past (or is it the womb from which he has been mercilessly driven and the horror of facing reality?). Indeed if T. E. Apter finds that fantasy is simply an approach or a way of seeing and representing reality (Apter 1983: 2), it is the more so in this book. Wells's pessimism is paramount in this novel. Even to that extent of departing from this world, man's drudgery remains invariable.

In *The History of Mr. Polly* (1910), Wells shows the same despair and bitter realization that mechanical culture and industry can only breed suffering and disease:

> If our community was collectively anything more than a feeble idiot, it would burn most of London and Chicago, for example, and build sand and beautiful cities in the place of these pestilential heaps of private property (Wells 1910: 357).

It is logical, then, to assume that Wells's fiction and essays pass through a gradual process of displacing and substitution: Optimism and hopeful views of progress aided by science are gradually replaced by thoughts of the mayhem, vandalism and mass destruction. His evolution as a thinker and a scientist is actually deterministic. Witnessing the tragic events of World War II, Wells was quite convinced that "the end of anything we call life is close at hand" (Wells 1945: 18). Anthony West, Wells's son of his secret marriage to the writer Rebecca West, admits that his father has committed a drastic fault in trying to behave counter to his own pessimistic disposition. Progress and optimism have not been primal in his thinking, "he

was a pessimist and he was doing violence to his intuition and his rational perceptions alike when he asserted in his middle period that mankind could make a better world for itself by an effort of will" (Bergonzi 1976: 10). Thus Wells at the end approaches the borders of the pessimistic vision of the contemporary writer William Golding (1911–1993) whose belief in man's evil nature is unshakable. As he puts it, "the whole human species, and not just the things he opposed, was an anachronism; it had failed to adapt to its environment, and its extinction is at hand" (Wells 1945: 25). Although he perceives the possibility of more developed beings than human race in his novel, *The War of the Worlds* (1946), his bitterness remains unabated since the human factor is an obsession in his thinking.

Viewed from the vantage-point of humanities, Wells's fiction remains a controversial one as it stands in opposition to traditional norms and views. The judgments vary between great admiration and outright castigation. David Lodge, for instance, finds that his work is no longer admirable and sometimes it is despicable (Lodge 1966: 214). George Orwell, himself an exponent of futurist and technological worlds, gives a totally different assessment of Wells. In his view, "The minds of all of us and therefore the physical world would be perceptibly different if Wells had never existed" (Parrinder 1970: 1). The judgment that is close to the viewpoint of the present study of Wells and his controversial works is provided by Malcolm Cowley who sees him as an outsider, unable to reconcile his visions with an aggressive and rigid world "Wells is the survivor of a prehistoric time, a warm ponderous, innocent creature ill-adapted to the Ice-Age in which we live" (Parrinder 1972: 27). Clearly the controversy that Wells's fiction and essays have stirred is infinite and incompatible according to the eyes of the viewer and his ideological or intellectual stand.

HUXLEY'S DYSTOPIAN WORLDS

If Wells realizes the wrongness of his convictions about the priority of sciences to humanities at a late stage in his career, Aldous Huxley (1894–1963) has this epiphany from the very beginning. Huxley shares Wells's scientific background, but he has his own reservations and hunches about the problematic relation between sciences and humanities. In one of his common authorial intrusions, Huxley uses his fictional personae (Lypiatt) to stress the influential role assigned to humanities which is complementary to that of sciences:

> What are science and art, what are religion and philosophy but so many expressions in human terms of some reality more than human? Newton and Boehone and Michelangelo—what are they doing but expressing, in different ways, different aspects of the same thing?
>
> "Alberti, I beg you", said Gumbril, "I assure you, he was the better architect"
>
> "We are all trying to talk about it," continued Lypiatt, "The physicists have formulated their laws, which are after all no more than stammering provincial theories about a part of it. The physiologists are penetrating into the secrets of life, psychologists into the mind. We artists are trying to say what is related to us about the moral nature, the personality of that reality which is the universe!" (Huxley 1949: 57).

Huxley shares some common points with Wells in his belonging to a scientific family and environment. Aldous is the grandson of the famous scientist, T. H. Huxley and his brother is the biologist, Julian Huxley while his mother belongs to the family of Matthew Arnold, the prominent Victorian critic and poet. "Although he showed interest in mysticism, Huxley refused to abandon his empirical attitudes and experimental perspective" (Brooke 1950: 9). Although he is fascinated by technology and material progress, he could not help expressing a sense of unease, irony and discontent about science's unpredictable practices. In his article, *"Tomorrow, and Tomorrow, and Tomorrow"*, with its conspicuous Shakespearian echoes, Huxley hints at the paradoxical situation of man as he benefits from the privileges of science and how he misuses this great gift and changes it into a disadvantage:

> We are living in a Golden Age, not only of past history, not of human history. For as Sir Charles Darwin and many others before have pointed out, we are living like drunken sailors, like an irresponsible heir of a millionaire uncle. At an accelerating rate we are now squandering the capital of mallic ores and fossil fuels accumulated of millions of years (Huxley 1972: 146).

His attitude towards science is marked by enthusiasm and a great hope. He sees it as the only means for fighting the rampant poverty and diseases:

> Today we like to think of applied science a kind of jinn, indentured to the service of the no-longer toiling masses. Half a century ago Tolstoy saw in applied science the greatest threat to liberty; the most powerful instrument of oppression in the hands of tyrants (Huxley 1949: 106).

Science according to the perspective adopted here is a bulwark against all types of evil and injustice provided that it should be used properly and reasonably. In his novels and essays, science appears as a double-edged weapon: A herald of a better world and more comfortable life and at the same time it is emblematic of the destruction and the dehumanization of man. It may bring "new terrors, world wars, social collapse, and radical conflict" (Bradbury 1993: 63). In terms of form and style, Huxley's fiction is better than Wells's as Huxley pays equal attention to the formalistic aspects of his work. A good example is his *Point Counter Point* (1928) which is structured around musical composition. Huxley's name is often associated with his *Brave New World* (1932) where the duality of sciences and humanities is central. However, he has written another novel that can be fairly called the blueprint or synopsis of *Brave New World.* In *Crome Yellow* (1921), Mr. Scogan gives his prophecy of a scientific utopia in which man's needs will ostensibly be gratified, "An impersonal generation will take the place of Nature's hideous system. In vast state incubators, rows upon rows of grand bottles will supply the world with the population it requires" (Huxley 1949: 78). Here the author draws the attention to the devastating and far-reaching effects of science on the social and moral life. The basic unit of society, the family, will disappear and the slogan to be followed is "Everyone belongs to everyone". This terrifying image will be used as the starting point for his nightmarish novel, *Brave New World.* Its setting is interesting in that although it is set in London, it portrays a state in which "national loyalties have lost all meaning and global travel and interchange are frequent" (Parrinder 2006: 293).

There is much to be said about this novel as it is pivotal for the arguments about science and humanities. The title has deliberate intertextual references to Miranda's euphoric cry of joy in Shakespeare's *The Tempest*. Ironically enough, the new world presented here is sinister, bleak and dehumanized. The total image of man in this world does not show him capable of a specific identity, stamina and peace; rather he is a creature haunted by "confusion, fear, and deathless individual awareness" (Watts 1969: 79). This 'brave' world hinges exclusively on the gigantic powers of reason and science. Anything outside these fields is not allowed to intervene. Human nature which may betray signs of non-conformity will be forced by Pavlovian conditioning or the opium (soma) to conform. Huxley refers to the possibility of gaining such a disciplined world through artificial incubation and decanting. The whole process involves test-tube-born inhabitants according to the state's needs and desires. All things related to race, intelligence, and future function will be determined in advance. The 'bravery' and 'newness' suggested in the title are ironic in that the state

becomes the oppressor and the individual the willess puppet. Science here helps in intensifying the enslavement of man. In his own introduction to the novel, Huxley elaborates his view about this issue" Science and technology have been used for man, not as though man were to be adapted and enslaved by them"(qtd. Watts 1969: 81). After 25 years of its publication, Huxley described the novel as simply an answer to Wells's optimistic imaginings of the future of man. "I have been having a little fun pulling the leg of H. G. Wells", he told his friend, Mrs. Arthur Goldschmidt (Bedford 1979: 144). Huxley's ironic attitude stems from the fact that if eugenics is practiced on a wholesale level, as Wells hoped, the result will be catastrophic since there will not be people ready to do the manual or dirty work:

> If every individual is capable of playing the superior part, who will consent to the dirty work and obey? The inhabitants of one of Mr. Wells's numerous Utopias solve the problem by ruling and being ruled, doing high-brow and low-brow work in turns (Huxley 1949: 244).

Again, this utopia or dsystopia is a microcosm of the world as Huxley sees it. There are ruling classes such as the Alphas while the Epilsons, the majority, keep the same position and wear distinct clothes and different colors:

> In this world there are various grades of human beings to do various work, ranging from Alphas, who hold all the positions of power and do all the intellectual work, to the Epilsons who do all the drudgery and are stupid to read and write. They are all bred for the purpose from selected germ cells, exposed to various devices depending on the theory of' conditional reflex (Huxley 1949: 15–16).

The first chapter is memorable and terribly shocking in its chilling description of human embryo factory where the eggs are emitted by carefully tended ovaries and are brought up in the way they should go. Science here is terrifying. Pavlovian conditioning will force every one to accept the role in this gigantic hierarchy. Here "the instruments of engineering are sex and soma… There is no chance of oddity developing into rebellion" (p. 26). The Director of the factory of generating babies shows the complex scientific function practiced here:

> The workers must be above suspicion, particularly those of the highest castes. Alphas are conditioned that they do not have to be infantile in their emotional behavior. But that is the mere reason for their making a special their inclination (Huxley 1949: 67).

In short this is what Huxley offers as a solution to man's many troubles. As expected, the representatives of humanities will react violently against this terrible and blatant violation of man's basic principles and values. Bertrand Russell (1872–1970) argues to this effect, when he says that "the world Huxley portrays is such as to arouse disgust in every normal reader, and obviously, in Huxley himself. I have been asking myself if that this well-regulated world really would be an improvement upon the one in which we live" (Watt 1975: 210). Russell's reaction is characteristic and predictable as he sees the danger threatening all humanities and traditions and above all man's existence. Even a fellow-writer, the German Herman Hesse, almost repeats Russell's warning verbatim, "with perspicuity and irony a completely mechanized world is depicted in which human beings have long ceased to be human but are only 'standardized' mechanics" (Watt 1975: 221).

Out of this brief survey of the works of Wells and Huxley, has become evident that humanities kick back against the flagrant encroachments and extravagancies of science and its exclusively rationalistic world. The striking thing here is that not only the recipients and readers of these works have expressed their rage and shock but more importantly, the writers themselves have more or less similar conclusions. If Wells felt fascinated by science and its potentialities at a certain time in his life, he, nevertheless, had the same disillusionment that Huxley is going to express in his own works. The difference, however, lies in their treatment of this topic. Huxley always speaks with tongue-in-cheek, but his implication is serious enough: all hopes pinned on reason, science, and mechanical life are virtually groundless or exaggerated at best.

THE SNOW-LEAVIS'S CONTROVERSY

In the following pages, the two writers (Snow and Albee) are viewed in terms of their representation of the controversy between sciences and humanities. The two explicate or dramatize the full implications of this relationship and its diversifications. Wells and Huxley, as we have seen, were content with showing and embodying the aftermath of the applications of natural sciences and their catastrophic consequences as viewed and discussed by the representatives of humanities. In other words the dialogue or clash between the two fields is concretized in certain creative situations where the negative and destructive uses of science are shown and brought to the forefront. In the following two names, a change is obvious. They

undertake the task of comparison and explication and the final outcome is given directly to the reader or audience, either to accept it or reject it.

Indeed Sir Charles Percy Snow (1905–1980) shares the afore-mentioned writers a common scientific background and a great faith in science's potentialities. He earned his Ph.D in physics at twenty five and did a great deal of scientific work and research. In his first novel, *The Search* (1934), the protagonist is a scientist whose main objective lies in pursuing scientific researches. Snow published a great number of scientific papers, particularly on infra-red investigation of molecular structures. One of his papers, *The Overture of Nitric Oxide*, published in the Royal Society Proceedings. "For these services, he was chosen as consultant for the recruitment of scientists to government service" (Thale 1964: 6).

His situation in relation to the first two writers brings to mind the third element in the Hegelian formula of dialectics. If Wells represents the thesis (at least in his first stage), Huxley the antithesis, then Snow stands for the synthesis. It is Snow who calls in his lectures, essays and books, for reducing the gap between the sciences and humanities. He argues that "the splintering of a culture into an increasing number of fragments between which communication becomes less and less possible, inevitably leads to attrition and decay" (Cooper 1959: 38).The arguments Snow raised in his memorable book, *The Two Cultures and the Scientific Revolution* (1959), originally based on the famous Rede lecture, are of prime importance. Not only do we have a rational and weighty critique of the interdisciplinary relation between sciences and humanities but also the exponents of humanities have to be on the defensive as regards the position of arts and humanities when compared with sciences. Because of its great influence, this lecture-book demands a close study. Its corpus is divided into two parts: The first is devoted to explaining the common points and contrasts between scientific culture and the humanist culture. The fist culture is innovative and continuously updating itself while humanities are restricted and derivative. He refers to the dichotomy between the two fields in the following:

> Our society is marked by two cultures which are widely separated—the traditional literary culture and the new scientific culture. They are not only divided, but each exhibits a profound dislike of the other. The literary culture in particular shows its antipathy openly; for since the twentieth century, it has professed contempt for adherents of the scientific viewpoint … They have a common distorted image of the other (quoted in Shusterman 1975: 4–5).

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Snow sees that literary culture (humanities) is not developed enough, while the scientific one promises a new Golden Age. In both views, there is a measure of inadequacy and lack of precision.

The second part is appropriately entitled 'The Scientific Revolution and the Rich and the Poor'. Here Snow emphasizes the role undertaken by technology and industrialization as the sole hope for the poor. He calls upon the advanced countries to assist in the development of India, South-East Asia, African, Latin American countries and the Middle East "We must understand the importance of science and technology and must educate a great many more students and technicians than we are doing" (p. 20).

As seen in these excerpts, Snow's emphasis is on science and the necessity of integrating it in all fields of life, including humanities. Snow's call for a compromise between the two cultures is not only unprecedented but costly. The custodians and defendants of humanities have felt that this writer whose propensities are actually scientific is encroaching on their borders and there is a need to counterattack him. This comes through the vigorous and often arbitrary attack of the Cambridge cultural critic, Frank Raymond Leavis (1895–1978). The fact of the matter is that when we scrutinize his main arguments and postulates, we notice the great bias of Leavis, the representative of humanities in his indiscriminate attacks against Snow, both as thinker and artist. Leavis castigates in a violent and long debate of Snow's intentions and goodwill. In Leavis's view, any attempt to bring the two fields together eventually will mar the integrity and independence of humanities. Seen in its entirety, the debate shows the extremist and biased line of Leavis's thinking in contrast to Snow's fair and balanced arguments. The title of Leavis's retaliation is *Two Cultures: The Significance of Snow* (1962). The title is, of course, ironic, since Leavis's objective is simply to stultify and subvert all Snow's intentions. Originally delivered as the Richmond Lecture at Downing College, Cambridge, its tone is fiery and impatient as he speaks about "the preposterous and menacing absurdity" he finds in Snow's postulates. Also he refers to Snow's "complete ignorance of history, literature, the history of the industrial Revolution. It is ridiculous to credit him with any capacity for serious thinking about the problems on which he offers to advise the world" (Kimball 1994: 125) As a novelist, Leavis finds Snow incapable of anything artistic or serious "as a novelist, he does not exist, he doesn't begin to exist. He can't be said to know what a novel is" (Leavis 1962: 298).

The foundations of such unprecedented attacks in English literature lie in Leavis's cultural concepts and intellectual attitudes. In contrast to Snow and his excessive admiration of the technological world, Leavis is pro natural and pre-industrial civilization. Elsewhere he finds in the changes

brought about by scientific revolution and machinery an anathema, a worry-inspiring thing:

> The great change, and, from our point of view, destruction, has of course, been the machine-applied power. The machine has brought many advantages but it has destroyed the old ways of life, the old forms, and by reason of the continual rapid change it involves, prevented the growth of the new (Leavis 1969: 3).

It is for these reasons that people like Leavis known for doubting and assaulting the new and its exponents such as Snow, see in present America as a place of both "the high standard of living and the life-impoverishment—the human emptiness; emptiness and boredom" (Leavis 1972: 60).

After the elapse of twenty five years since this dispute between the two men started and the cultural differences they represent, one can fairly recognize the validity of Snow's arguments and the seriousness of his warnings. In contrast, Leavis's views seem question-begging and opinionated. Even as an artist, his sequence of novels *Strangers and Brothers* (1940) and interesting characterization of his Lewis Eliot, qualify him for a niche in the history of the English novel. Indeed, his *The New Men* (1934–1946) published in 1954, illuminates the clash between the scientific orientation and the underlying moral and humanist assumptions. The book abounds with examples about the urgent need for seeing the scientific development within its wider moral context.

Evidently Snow's task is not simply to reconcile between two clashing disciplines (Sciences and Humanities) but also to enlighten the minds that have been long subjected to a discourse always doubting and mocking the scientific endeavor.

EDWARD ALBEE'S VIEW

In Edward Albee's *Who's Afraid of Virginia Woolf* (1962), there is a great emphasis on the controversy between humanities and sciences, although Albee belongs to a totally different type of writing and intellectual orientation. It is only in this particular play that Albee finds himself fascinated by the dispute about the priority and significance of one or the other of the contesting disciplines. One common point that brings this play to the rest of the works discussed is the negative and dubious image of sciences as viewed by the representatives of humanities. It has to be stressed

that the American writer (born in 1928) is not concerned with utopian or dystopian worlds as Wells and Huxley have done, nor does he feel committed to find a rapprochement between the fields as in Snow's case. In fact, the whole situation is seen from a comic and even sarcastic viewpoint. As a typical artist, Albee makes his academic hosts, the couple of teachers of history (George and his wife, Martha) receive their guests (another couple of academics, the representatives of science) and spend an evening in a celebration of the twenty first birthday of the hosts's fantasy son. At the end of a long evening of drinking, nagging and abusing, we discover that the whole thing is a fantasy and that they are actually childless, just like their guests. So it is through the speeches exchanged and the various behaviors and expressive gestures that the duality of sciences and humanities is shown and highlighted.

The play as a whole is problematic and has fostered many interpretations and inferences, some of them are textual, and others are derived from the biographical information about the writer and his experiences. Ruby Cohn, one of the influential critics of the absurd theater, refers to the complexity of the play's interpretations as being "a marital problem play, a campus satire, a veiled homosexuality or the symbolic meaning of George and Martha (the father and mother of the United States" (Trussler 1983: 18).The particularity of Albee's situation is that the relation between sciences and humanities is not a consistent line in his works as we have seen in the previous names and figures. It is only in *Who's Afraid of Virginia Woolf* that this relation is foregrounded. The reason is clear: Albee belongs to a trend that is concerned with the existential and perennial, not the here and now. Critics have sought to label him within clear-cut and specific categories, but to no avail. He is seen as "an absurdist" (Esslin 1961: 313), "subversive" (Bigsby 1985: 78), or an expressionist, writing in the manner of Tennessee Williams or Arthur Miller. Albee himself admits that he is closer to the leader of expressionism, August Strindberg, "More Strindberg than Ibsen … psychological", he tells his interviewer (Wagner 1967: 52). Out of the welter of interpretations of this play, one level of reading is clear: It posits the illusions and fantasies of humanities opposite the sterility and mechanized life of the representatives of science. In this situation the audience is left to guess and judge for itself although the choice in such situations is not an easy one. The situation is so ambivalent and hazy that each team has its own merits and demerits. Hence the difficulty of preference.

Generally speaking, the overall image of both groups (humanities and sciences) is not captivating. Both suffer from professional weaknesses that do not lead the audience to an easy and plausible conclusion (a typical

absurd situation). Here the action is minimized (only an evening party is held) and the next morning the hosts realize their fault and liberation from their fantasy (having a boy). The play comprises three acts. The first is entitled 'Fun and Games'. The second is 'Wapurgisnacht' while the third carries the symbolic and typically expressionistic heading, 'Exorcism'. Indeed the initial games of the party gradually give way to the long-suppressed feelings of pain and disillusionment (George and Martha) who are totally different in disposition, social status (she is the daughter of the president of the university) and even sexual prowess. After a long scene of quarrelling and abusing before their guests, the couple discovers that their dream or fantasy (their boy) is simply a lie, a self-deception. The title of the play is emblematic in that the British writer (Virginia Woolf) was virtually childless and has been an energetic defendant of the humanities and woman's rights. It could be ironic but the implication of the title would be totally different if the name were replaced by, say, Albert Einstein.

In any case, the play draws upon contrasts between the bizarre but warm and passionate relation tying the representatives of humanities (George and Martha) to each other, and the indifferent and cool outsiders, the biologists, Nick and Honey. While talking to his guests, George assaults the scientific field and its snobbish pretensions:

> George: I'm very mistrustful. Do you believe that people learn nothing from history? Not that there is nothing to learn, mind you, but that people learn nothing. I am in the History Department. I'm a Doctor, A, B.M.A. PhD … ABMHPHD! Abmaphid has been variously described.. a disease of the frontal lobes, and a wonder drug. It is actually, both. I'm really very mistrustful. Biology, hunch?
>
> Martha: You're a blank, a cipher.
>
> Honey: (to George) I don't know until now, just a minute ago, that you had a son.
>
> George: (as if struck from behind) What?
>
> Honey: A son! I haven't known.
>
> Nick: You to know and we to find out. Well, he must be a big…
>
> Honey: Twenty-One-twenty-one tomorrow's—his birthday.
>
> (p. 33)

Apart from the ceaseless clashes between George and Martha, the dialogue highlights the tremendous differences between humanities and sciences. The representative of science, Nick, appears cool and even impotent, when Martha puts him to test. By means of expressive gestures

learnt from "the master whom Albee admires very much, Bertolt Brecht" (MaCarthy 1987: 16), the similarity between the situations of the scientist and the historian is made clear. Both of them (George and Nick) smart under different strains and pressures. Also they suffer from deep frustrations although they pretend to be otherwise. If George admits through his words and actions that he is "both jaded and impotent" (Martin 1982: 2), Nick's position takes some time to give the same impression to the audience. George's tone in dealing with the representative of science is ironic and sarcastical:

> Martha: (to Nick) Hell, you can take over the History Department just a easy as from there as any one else. God knows, somebody's going to take over the History Department, someday, and it ain't going to be Georgie…
>
> George: Martha eats them (chromosomes) for breakfast. She sprinkles them on her cereal. It's very simple, Martha, this young man is working on a system whereby chromosomes can be altered, well not all by himself—he probably has one or two co-conspirators—the genetic made-up of a sperm cell changed … for hair and eye color, stature, potency… I imagine.. hairiness, features, health… and mind. Most important… Mind. All imbalances will be corrected, sifted out…propensity for diseases will be gone, Longevity assured, we will have a race of men… test-tube-bred-incubator born…superb and sublime.
>
> (p. 45)

It is quite evident that George and Nick belong to two entirely different worlds: humanities and sciences. Each party is convinced about the usefulness and validity of its specialization. But both refer to different times: the historian to the past while the scientist refers to the future. As a member of the literati, Albee prefers to give George (the representative of humanities) the upper hand in accentuating the moral lessons of the play and the wrongness of the scientist's attitudes and judgments. For all his apparent emasculation, George "grows in stature, taking on more control, becoming, for a time, quite menacing", as Susan Abboston cogently argues (Abboston 2003: 197). It is interesting to note that the image of the future concretized with the aid of biologists like Nick will not be a brilliant one. In fact it will inevitably be in line with what Wells and Huxley have visualized in its tragic loss of liberty and distinct identity:

George: ...a race of scientists and mathematicians, each dedicated to and working for the greater glory of the supercivilization. There will be a certain loss of liberty, I imagine, as a result of this experiment…but diversity will no longer be the goal. Cultures and races will eventually vanish…the ants will take over the world.

Nick: Are you finished?

George: (ignoring him) And naturally I am rather opposed to all this. History, which is my field… History of which, I am one of the famous bogs.

(p. 46)

In contrast to the single-dimensional view of sciences and their malpractices as seen in the works of Wells and Huxley, Albee's procedure is to provide the audience with a comprehensive image of the contesting disciplines so that the audience will be in a position to see and assess the validity of the cause of humanities. Indeed the overall image of the biologist, for all his wit and youth, is not a good one. As James Martin puts it, "Although science is allegorically represented by the apparently virile young biologist, his sexual vigor is called into doubt", while his marriage to his wife, Honey, is simply because of her 'false pregnancy' (Martin 1982: 20). Moreover, it is clear in the dialogue that ensues between the two couples that Nick's marriage is for material benefits and because of her pregnancy (later it turns out that the whole thing is false, just like the notion of the imaginary son of the historians). It is true that the historians' mode of life is marked by "despair, aggression and love" (McCarthy 1987: 65). However, the concluding moments of the play are, nevertheless, to George's favor, since Martha stresses the great amount of love she has for her husband for all his academic incompetence and lack of manliness. Nick, in contrast, is living a loveless life based on indifference, cool and utilitarian spirit. George and Martha, for all their failure and masochistic drives, appear to be more human and fallible when compared with Nick and Honey with their reserve, cocksureness and aloofness.

The biologists prefer to remain childless and are content with watching the human tragedy. The stature of the historian grows as the play approaches its end when he proves his courage and reveals the secret they have cherished for a long time (having a son) and proclaim that it is false. It is in these moments that Martha expresses her great love and admiration for her husband and it is "she who is afraid as she sings the refrain" *(Who's Afraid of Virginia Woolf)*. Although both couples have a sterile life, the historian, George, is ready to face and force his wife to realize the futility of

their existence, whereas Honey keeps on drinking wine and shunning any reference to giving birth or pregnancy. He thinks such elements might be distracting to her scientific projects. It is true that George and Martha have a dull and humdrum life. This, however, holds true to Nick and Honey, although they are more miserable and less humane. Briefly stated, the writer suggests in more than one situation that the historians in the play surpass and outweigh the biologists, even though their field does not go beyond the verbal and narrative for the simple reason that they are humane and content with their lot.

All the abovementioned situations and arguments in this paper have boiled down to one basic premise: Scientific studies and humanities will always be separate and even opposite fields, even though their starting-points are similar: Both are dreams, visions and conceptualizations of things to be materialized later and come true. Their disciplines and procedures and even findings are enveloped by misconceptions, biases and underestimation of each other. Each team is quite convinced by its own practices and the constructive role it achieves. Occasional calls for a compromise as the one suggested by Snow often backfire as the differences between the two disciplines are too deep-rooted to be overcome and eradicated overnight. Although their purposes are similar in that their potentialities are put at the service of man and sublimating him and removing or at least mitigating the obstacles impeding his progress, sciences and humanities widely diverge for different reasons. Some of these, as we have seen, lie in the very nature of the discipline and its immediate or future strategies. Above all, science is concerned with the material and mechanical while humanities are concerned with man's inner life, aspirations, fears and spiritual things. Despite their incongruous lines and enterprises, both are indispensable and integral to man's needs of body and soul. It is in Pound's felicitous phrase that "The artistic (humanities) and the scientific hang together. Any conception which does not see them in their interrelation belittles both" (Pound 1952: 223). But this is not so in actuality. The contesting parties are doomed to go on endlessly in their arguments and counter-arguments asthey appeal to different touchy and incompatible spots in man's thinking and imagination.

THE POSTMODERNISTIC POSTULATES OF A BLEAK WORLD

The significance and the seriousness of the arguments between sciences and humanities already explored become clearer and deeper when we refer to some representative names of the post-war generation of writers in Britain and the United States. Indeed many of these writers have already tackled the

various dimensions of the forebodings of the earlier writers about the bleak destiny awaiting mankind when science becomes the sole guide in man's life. Writings belonging to different artistic trends and movements, traditional or avant-garde, have concentrated their attention on the abuses and even terrifying practices attributed to science, particularly in the apocalyptic vision of nuclear wars or the annihilation of man and the continuous and self-inflicted attrition and destruction of his environment. Such writings can be viewed as implementing the visions and nightmares conceptualized or perceived by the earlier writers. However, one striking difference is worth-mentioning here: These post-war works of fiction and drama no longer devote much space to the arguments about the constructive or destructive role of science in human life. Instead, they unanimously show or represent the aftermath of a life fully controlled or permeated by science and its dehumanizing and devastating technology. The direct corollary of all this is the objectification of man's existence and the impending possibility of his total and wholesale destruction or even extinction.

Examples abound here. However, it is sufficient to mention some references to a few of these. Ray Bradbury's *The Martian Chronicles* (1950) is a collection of short stories whose main interest is the threats and anxieties about the nuclear war and the longing for a simple life. Indeed this fear of the threats of wars and the nostalgia for a lost rural world will be a recurrent topic in the post-war literary works. Evelyne Waugh (1903–1966) in his *Men at Arms* (1952), for instance, tackles the subtle relation between the contemporary and the futile and chaotic and the uncontrollable outbreak of wars. As its title indicates, the writer's emphasis is laid on the precarious position of man in a world ceaselessly threatened by war and its destructive forces. Moreover, the materialist views which are the direct outcome of the scientific culture constitute the core of his comic and serious novel, *The Loved One*: *An Anglo-American Tragedy* (1948). Angus Wilson (1913–1991) traces a similar line of thinking and views about the unpredictable and swift-changing modes of life. Once again science is perceived as a negative or rather subversive force in the life of human beings, forcing or tempting them to adopt such mechanical and materialist modes and methods. His *The Old Men at the Zoo* (1961) runs in parallel lines in that it is a dystopia of human life overshadowed by nuclear war and its destructive repercussions. George Orwell's *Nineteen Eight*y *Four* (1948) is a good example of how scientific technology is manipulated for the task of intruding upon and monitoring man's most intimate affairs and privacy, including his relation with his wife in bed. Under the totalitarian systems, the novel suggests, the scientific know-how is put at the service of spying on man and persecuting him, subjecting him to all sorts of real or perceived threats.

Such misgivings and apprehensions furnish the general framework of most post-modernistic fiction and drama. Although these writings show and celebrate the potentialities and of form and innovation, their thematic content is no less horrifying and shocking. Indeed, the same fears of the possibility of atomic destruction come to the fore here. The name of the Irish writer, Samuel Beckett (1906–1989) balks large in this regard as his minimalist writings compel the reader or recipient to ponder and see the terrifying consequences of the scientific revolution on man's growing decay and annihilation. He has explored the various aspects of such topics in his famous trilogy (*Molloy, Malone Dies* and *The Unnamable*, 1959) and his absurd theatre. The truth is that these are central in all his writings, where man's mutilation, both physical and psychological, is foregrounded. Such is the emphasis laid here that the last part of his trilogy, *The Unnamable*, highlights the terrifying impact of wars, radiation and drugs. The man character in the book is a semi-human being, or rather; a disfigured being that represents fully all types of loss, degradation and humiliation. His intentional namelessness is suggestive enough of his position in this wilderness. Dehumanization reaches the climax here due to the nightmares of science and its unpredictable consequences. Mahood, a torso in a jar, which hangs before a restaurant, indulges in lengthy monologues that embody his deplorable predicament with all its universal implications:

> I know I am seated, my hands on my knees, because of the pressure against my rump, against the soles of my feet, against the palms of my hands, against my knees (Beckett 1979: 279).

Beckett's *Endgame* (1958) belongs to the literature of disaster and the destruction of man as felt in the very title of the play. It is indeed the end of the game of life, not because of external or natural forces such as earthquakes or volcanoes. Rather, it is from within: Man's self-inflicted wounds that have been exacerbated by the uses of science and technology. To be sure, all Beckett's work shows a terrible encroachment on and breaching of the inalienable laws and systems of life and ecology. The world of *Endgame* is on the wane as the book describes and shows the drastic consequences of a post-nuclear world. The main characters (Hamm and his servant, Clov), keep talking about the unspecified disaster so that all other people are "corpsed" (p. 25). Such is the wasteland of a post-war catastrophe that all indications of fauna and flora are completely wiped out. In this connection, it is a great surprise that they discover "a flea" in Clov's pants;

Clov: (anguished, scratching himself). I have a flea!

Hamm: A flea! Are there still fleas?

Clov: On me there's one. (Scratching). Unless it's a crablouse.

Hamm: (very perturbed). But humanity might start from there all over again! Catch him, for the love of God!

Clov: I 'll go and get the ponder. Exit Clov.

Hamm: A flea! This is aweful! What a day! Enter Clov with a sprinkling—tin.

Hamm: Let him have it!

(p. 27)

Funny and ironic as it is, this scene or rather the whole play is a typical example of the postmodernist's shuddering vision of man's position in this decaying world. It is a sterile world and all creatures, human beings and animals, "have come to the end" (p. 50). The only survivors of this terrible catastrophe are Hamm and Clov whose task in the play lies in narrating and showing the consequences of that wholesale destruction. It is sort of death-in-life that they are compelled to liver since everything around them have lost any indication of growth or life,

Hamm: Open the window.

Clov: What for?

Hamm: I want to hear it.

Clov: You would n't have it.

Hamm: Even if you opened the window?

Clov: No.

Hamm: (Violently). Then open it!

(p. 43)

As a direct consequence of the indiscriminate use of science and man's selfishness and lust for power and hegemony, man's disappearance becomes expected if not inescapable. It is a sort of a diminishing process that Foucault traces in his view that "man would be erased like a face drawn in sand at the edge of the sea" (Foucault 1973: 387).

If the physical presence of man becomes questionable, it is not surprising to know that the main epistemological issue in his writing (meaning) becomes doubtful as well. The critic Adorno highlights this issue when he sees that Beckett's work as a whole "puts meaning on trial, unfolding its history" (Adorno 1997: 153).The meaninglessness of man's

cultural wilderness is one of the leitmotifs of Beckett's texts which keep suggesting those destructive forces accelerating the end of man in this existence.

Beckett's work as seen in the brief account given here deplores the collapse of man's world as a result of the arbitrary and irrational uses of technology and science. If the presence is marked by intimidation, decay and subversion, the result is this terrible sense of loss, self-pity and loneliness. The French critic Maurice Blanchot sums up man's predicament in the midst of these clashing forces and his sheer helplessness and willlessness concerning his situation, "when everything has been annihilated, when there is no more world, when there is no world yet" (Blanchot 1982: 339).

Similarly, the position of man in the works of Thomas Pynchon (b. 1937) is precarious and subject to all types of threats and fears as a result of the mechanical life in modern America (and by extension, contemporary culture). As in the case of Giles and Anastasia in John Barth's *Giles-Goat-Boy* (1960), Pynchon's *The Crying of Lot 49* (1965) hinges on a quest ,a pursuit of a series of secrets and harassments that eventually ends in the bitter realization that there is another esoteric world cohabiting with the heroine's daily world, controlling every step of hers. All this happens by chance or decreed by fate as the whole enterprise of discovery takes place by coincidence: at the moment when Mrs. Oedipa Maas, the California wife, learns that her ex-lover, Pierce Inverarity, has died and left her an important will:

> Oedipa had been named executor, or she supposed executrix of the estate of one Pierce Inverarity, a California real estate mogul who had once lost two million dollars in his spare time but still had assets numerous and tangled enough to make the job of sorting it out more than honorary (p. 9).

Oedipa's mind is charged with memories and apprehensions whose main axis is the science world and its drastic consequences—dehumanizing technology and destructive wars. In her consciousness she could not keep her mind away from these ever-present obsessions:

> Oedipa couldn't understand how he could still get so upset even. By the time he married her he'd already been two years at the station, KCUF, and the lot on the pallid, roaring arterial was far behind him, like the Second World War or Korean Wars were for older husbands (pp. 14–15).

The main preoccupation of *The Crying of Lot 49* is to explore the terrifying influences of the media and publicity and how the individual is always at the mercy of these scientific devices. Such is the influence practiced by the mass media on people that the truth is almost blurred. It is in this situation that the human ego or self is" never free from servitude to irrational forces and institutional pressures from without" (Waugh 1995: 180).

Definitely, Pynchon's *The Crying of Lot 49* does not highlight the atrocities of the war and highly sophisticated weapons used in both Dresden and Hiroshima as we find in, say, Kurt Vonnegut's *Slaughterhouse Five* (1968). However, Oedipa's scars and troubles run in line with those of Billy Pilgrim, the American soldier in Europe in the last years of World War II. At any rate Pynchon's *Gravity's Rainbow* (1973) stresses the apocalyptic insanity of the world. It is a hallucination about" the end of the world", as McConell rightly puts it (McConell 1977: 162). The war is a topic forming the backdrop of Pynchon's *The Crying of Lot 49*. Its emphasis is on the accelerating rate of automatic and secretive world of the American communication and media. Oedipa's problem starts when she finds herself in the midst of a terribly mechanical world whose mysteries she is unable to decode or understand. Its agents or those involved in its web keep her in a state of mystification and awe regarding their practices and interests. In other words the novel is a search not only for the external facts in society which are awesome but it is also a discovery of the individual drives and fears. In this expedition Oedipa, as her name suggests, is exposed to the most confusing and ossificating experiences. The human feelings in this novel turn into the insensate, especially in the amorous and erotic situations. Indeed this is the most memorable moment in the book where man's intimate feelings are objectified and rendered devoid of their original sense and value. The machine, the novel suggests, has replaced what is human and genial. If she "cries" at the end (by the way, the title of the novel is the last sentence of the book), this is indicative that the ongoing process of ossification has not reached her innermost self. It is summed up by Hilfer's laconic, post-Cartesian view that" she cries, therefore she is" (Hilfer 1992: 148).

In this loveless and extremely mechanized world, even sex which is one of the most powerful drives in man's existence is stripped of its original meaning. She is always surrounded by the two intials, D.E.A.T.H. (Don't Ever Antagonize The Horn) (p. 121), and W.A.S.T.E. (We Await Silent Tristero's Empire) (p. 123). Needless to say, these terms betray the insensitive and petrified world which is the direct outcome of the scientific and mechanistic modes of living and thinking. Here is the account Oedipa

gives of the sinister world of Tristero and how people are unable to figure out its mysteries:

> So began, for Oedipa, sinister blooming of the Tristero. Or rather, her attendance at some unique performance, prolonged as if it were the last of the myth, something a little extra for whoever'd stayed this late. As if the breakway gowns, net bras, welled garters and G-strings of historical figuration that would fall way were layered dense as Oedipa's own street-clothes in that game with Metzger in front of the Baby Igor movie; as if a plunge towards dawn indefinite black hours would indeed be necessary before the Tristero could be revealed in its terrible nakedness. Would it smile, then, by coy and would flirt any harmlessly backstage, say good night with a Bourton Street bar, come back down the runway, its luminous stare looked to Oedipa's smile of one malign, and pitiless ; bend to her alone among the desolate rows of seats and begin to speak words she never wanted to hear (p. 36).

Thus, in this strip scene everything is mechanized and emptied of any sense. Besides, Oedipa appears to virtually senseless, unable to respond to or feel anything. The critic Frank Kermode points out that Oedipa's ordeal in this highly sophisticated and objectified world consists of being caught between fear of the absence of order and of a total but malevolent order (Seed 1988: 128). In the striptease scene not only is the distance between fiction and reality blurred but also the whole act is made senseless. The music to which Oedipa and Metzger is compared to "deep crescendo of naval bombardment, machine-gun, hewitzer and small-arm five screams and chopped prayers of infantry" (p. 37). The fugue of guitars is completely electronic and played by a band of players called' The Paranoids' "whose guitars must be blowing all the fuses off in the motel" (p. 42). This utterly technological and system-linked world represents a continuous challenge and threat to man's very existence and his basic human needs. The novel is replete with such highly expressive scenes where the individual appears to be at a loss as regards the material and technological developments so that at the end everything turns into a sort of labyrinth where there is no exit or egress:

> The ordered swirl of houses and streets, from this high angle, sprang at her now with the same unexpected, astonishing clarity as the circuit card had. Though she knew even less about radios to both outward patterns a hieroglyphic sense of concealed meaning , if an intent, to communicate. There'd seemed no limit to what the printed circuit could have told her (if she had tried to find out); so in her first minute of San Narciso, a reaction also trembled just past the threshold of her understanding. Smog hung all

> round the horizon, the sun on the bright beige countryside was painful (p. 24).

Such scientific worlds turn all images of the self into 'narcisstic' desires. It is a world "hungry for revelation but caught in meaninglessness where signals are empty or at least enigmatic" (Bradbury 1987: 147). *Gravity's Rainbow* stresses its main premise that modern man lives in broken postlapsarian world where the machine proves its ability to obliterate man and humanity. His characters have names which suggest so many things in this wasteland—Profane, Pig, Stencil, Dewy Gland, Slothrop … etc. In his *V.* (1963), another equally expressive name is worth mentioning here. SHROUD, a name of an automaton which is the abbreviation of Synthetic Human Radiation Output Determined once again brings to mind all manifestations of man's horrid existence In this topsy-turvy world the machine satisfies even man's sexual needs and can replace human beings:

> There was a technician named Urban,
> who had an affair with a turbine,
> "It is much nicer", he said.
> "Than a woman in bed".
> And it's sure as hell cheaper than bourbon!" (p. 307).

The only inference one can get in reading a novel like *The Crying of Lot 49* or his equally significant novels like *Gravity's Rainbow* or *V.* is that Pynchon accentuates the sinister impact of science and technology on man's very presence and his human sense. Man appears in these texts along with the ones already discussed as a miserable creature that has to fend for himself in a meaningless and menacing world.

The case of John Barth is more or less different when compared with Beckett's or Pynchon's for the simple reason that his fiction, particularly *Giles-Goat Boy* draws upon a certain trend in writing—the self-referential fiction or the fiction that investigates its own tools and medium as seen in his renowned article *The Literature of Exhaustion* (1969). He also uses allegorical modes of writing so that the final impression one gets is that of a quest, an expedition no less perilous and stupefying than that undertaken by Oedipa in *The Crying of Lot 49*. John Barth's allegory, *Giles Goat-Boy*: *Or the Revised New Syllabus* (1966) whose main interest is, of course, ontological—the genesis of the world. Giles of the title is a modern Messiah who sets out to conquer the terrible WESCAC Computer system that threatens to destroy the community. The hero's descent down to the centre of the giant computer is a nightmarish image that runs in line with the sciences-humanities controversy. It creates a sense of unease and tension in

the beholder's mind and a profound desire to flee from its inhuman impacts. The computer is used here as a metonym, suggesting the predominant power of technology and its irresistible influence on man and his very existence.

For all these ostensible differences between Barth's novel or rather anti-novel and Beckett's and Pynchon's literary texts, Barth's final image of the world of technology and its detrimental role in man's existence is a point they all share. He acknowledges elsewhere his deep interest in the uncanny and exotic worlds that can only appeal to imagination, in a milieu where such things are seen as anathema. He tells us that "the impulse to imagine alternatives to the world (which) can become a driving force for writers. I confess that it is for me…" (Barth 1965: 8). This novel does debunk the subversive, intimidating and dehumanizing role of the machine in objectifying man's life. In fact this is a constant obsession in all Barth's writings. Even the literary text itself is compared to a large machine' "incredibly complex and controlled from a great central switchboard like the console of a pipe organ… a cunning multifarious vastness" (Barth 1968: 93).

The computer in *Giles-Goat-Boy* is devoid of the familiar facilities and services it can provide human life. On the contrary, the writer's emphasis is laid on its destructive and possessive characteristics. It is shown to be capable of controlling the university (or perhaps the universe, since the destruction of man can take place by pressing the computer buttons), controlling its staff members, syllabi and the selection of Grand Tutors. Its radiation is fatal. As such, any attempt to grapple with its gigantic power is doomed to be futile or at least too costly. In this case, the attempt exerted by Giles and Anastasia to put an end to its terrible effect on the life of those working in that university appears to be admirable and respect-worthy. Entering the 'belly' of the giant computer (WESCAC) is the most horrid and chilling experience as the computer itself is not only capable of devouring all except the "actual" Giles, but also its radiation can inflict sterility on its victims such as Max Spileman. The heroic and sacrificial role of the participants in the dismantling of this terrible machine (the computer) can be felt in the mythologizing echoes not only for the name of the hero of the title (his job brings us to the dawn of history where man acts by intuition and spontaneity only), but also his lover and co-participant. Anastasia is no less daring and adamant than Giles as her name recalls to our minds the Roman Saint who has been beheaded along with saint Basillisa for having buried the bodies of St. Peter and St. Paul (Wordsworth 1994: 33). Only such people with that great stamina and forbearance can grapple with the destructive effects of WESCAC. Significantly enough, it is in the midst of WESCAC's belly that Giles knows the truth not only of his individual

salvation but that of humanity and its splitting concepts and compartmentalizing.

Accordingly, the main episode in the novel centers on the painstaking effort of the two (Giles and Anastasia) in putting an end to the role of this giant and terrible computer in the life of the academy which is a microcosm of the world at large. Indeed some aspects of this computer bring to mind what Huxley has already shown about the menacing and threatening role of the machine in man's life. WESCAC does not only control the life of Tammany Campus, but also it acts as a semi-human being. It can inseminate woman or devour those who fail to give the right answer. Thus the factual and symbolic dovetail to make this machine as the centre of the academy. It is in McConell's phrase "the treasure, the guardian, and potentially malevolent controller of New Tammany College" (1977: 144). Its activities cover a wide spectrum of things that almost match or even surpass man's cognitive powers as it can "excogitate, extrapolate, generalize and infer after its fashion; it could compose an arithmetical music…it could assess half a hundred variables and often make the most sophisticated prognostications" (McConell 1977: 140).

If we leave aside its dazzling field of operations and the activities it is capable of doing which one could say that they have the potentiality of replacing man altogether, the physical description of this machine enhances this general impression about its evil presence. In fact the authorial omniscient description runs in line with what has already been said about the sinister suggestions of the computer. It has, we learn, "floor and walls (which) were lined with a deep, spongy material… Moreover, the room had the feel of an irregular hollow sphere at least where I stood" (McConell 1977: 509).

Giles-Goat-Boy, for all its triumphant end in defusing the computer and consequently preventing the Riot III (World War III), is sprinkled with all types of pains and perils that science could bring to man, his environment and civilization in general—barrenness, sterility, effete masculinity, impotence, paralysis (a reminder of the modernistic texts of Eliot, Lawrence, Joyce, Lowry, Durrell… etc.). As already shown in the arguments, WESCAC is capable of representing the sciences-humanities duality as it has all the potentialities to control and erase man and his world altogether. Only by a great and fastidious effort could man escape its horrible effects and rid himself of bondage to its cruel and insensate powers.

In general, the postmodernistic texts chosen here, for all the differences among their authors in terms of disposition and artistic and intellectual orientations, have one common and invariable trait: The genuine and justified fear that a world solely guided by science is surely a doomed

and futile one. Man's position under such circumstances is unenviable and perilous. In other words, the visions presented here are simply a crystallization, reinforcement and elaboration of the misgivings raised in the arguments of Wells, Huxley, Leavis and Albee concerning the precarious position of man when he is left at the mercy of the dehumanizing forces of science and technology. In most of the texts written in this field whether at the beginning of the twentieth century or at present, science has always been a topic of controversy and dispute concerning its final outcomes and impact on man's existence and future. The current situation of global warming and its detrimental and devastating consequences can only verify the apprehensions and visions given in the texts already discussed and many others running in the same direction.

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